

The COVID-19 MISS study – SUPPLEMENTARY TABLES & FIGURES

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Supp. table 1. Sample size and stratum representativeness in the CHUV and Unisanté institution by work category

<i>Work Category</i>	<i>Blood samples collected / Total number of HCWs</i>			<i>Stratum representativeness (% collected per stratum)</i>		
	<i>CHUV</i>	<i>Unisanté</i>	<i>Total</i>	<i>CHUV</i>	<i>Unisanté</i>	<i>Total</i>
Nursing staff	532/3895	16/106	548/4001	13.7%	15.1%	13.7%
Administration	433/3217	41/309	474/3526	13.5%	13.3%	13.4%
Physicians	309/2259	28/210	337/2469	13.7%	13.3%	13.6%
Medical technology staff	144/1051	6/44	150/1095	13.7%	13.6%	13.7%
Logistics	194/1318	1/3	195/1321	14.7%	33.3%	14.8%
Nursing assistant staff	97/533	1/4	98/537	18.2%	25.0%	18.2%
Students/Apprentices/ <i>Trainees</i>	52/382	3/24	55/406	13.6%	12.5%	13.5%
Social workers	14/99	0/0	14/90	14.1%	-	14.1%
Faculty	3/20	0/0	3/20	15.0%	-	15.0%
<i>Total</i>	<i>1778/12774</i>	<i>96/700</i>	<i>1874/13474</i>	<i>13.9%</i>	<i>13.7%</i>	<i>13.9%</i>

Supp. table 2. Basic demographic characteristics within each work category

	Overall (N= 1874)	Students/ Apprentices/ Trainees (n=55)	Faculty (n=3)	Logistics (n=195)	Physicians (n=337)	Nursing assistant staff (n=98)	Administrati on (n=474)	Medical technology staff (n=150)	Nursing staff (n=548)	Social workers (n=14)
Gender										
Female	1267 (67.6)	37 (67.3)	0 (0.0)	91 (46.7)	176 (52.2)	70 (71.4)	349 (73.6)	103 (68.7)	430 (78.5)	11 (78.6)
Male	607 (32.4)	18 (32.7)	3 (100.0)	104 (53.3)	161 (47.8)	28 (28.6)	125 (26.4)	47 (31.3)	118 (21.5)	3 (21.4)
Age (in years)										
Mean	41.6	24.6	55.7	46.3	40.1	48.8	43.5	41.2	40	30.9
(95% CI)	(41.1 – 42.1)	(23.2 – 26.1)	(35.7 – 75.6)	(44.8 – 47.9)	(39 – 41.2)	(46.8 – 50.9)	(42.6 – 44.5)	(39.4 – 42.9)	(39.1 – 40.8)	(27.1 – 34.7)
Median	41	24	55	48	37	51.5	44	41	38.5	28.5
(Min-Max)	(18 – 70)	(18 – 50)	(48 – 64)	(22 – 65)	(23 – 70)	(20 – 64)	(20 – 65)	(23 – 64)	(21 – 64)	(24 – 46)
Current smoker?										
Yes	339 (18.1)	14 (25.5)	1 (33.3)	50 (25.6)	26 (7.7)	24 (24.5)	87 (18.4)	21 (14.0)	114 (20.8)	2 (14.3)
Comorbidities										
Cardiovascular disease	134 (7.2)	0 (0.0)	0 (0.0)	26 (13.3)	23 (6.8)	9 (9.2)	34 (7.2)	14 (9.3)	28 (5.1)	0 (0.0)
Chronic lung disease	90 (4.8)	1 (1.8)	0 (0.0)	4 (2.1)	21 (6.2)	1 (1.0)	25 (5.3)	8 (5.3)	30 (5.5)	0 (0.0)
Immune system disorder	47 (2.5)	1 (1.8)	0 (0.0)	1 (0.5)	6 (1.8)	4 (4.1)	14 (3.0)	2 (1.3)	19 (3.5)	0 (0.0)
Diabetes	26 (1.4)	0 (0.0)	0 (0.0)	5 (2.6)	2 (0.6)	2 (2.0)	8 (1.7)	3 (2.0)	6 (1.1)	0 (0.0)
Cancer	14 (0.7)	1 (1.8)	0 (0.0)	1 (0.5)	0 (0.0)	1 (1.0)	4 (0.8)	0 (0.0)	7 (1.3)	0 (0.0)

Supp. table 3. COVID-19 seropositivity according to demographic conditions

Levels	Total sample	Seropositive	% positivity (95% CI)	p-value*
Age				
<= 40 years	916	101	11.0% (9.1,13.2)	0.17
>40 years	958	87	9.1% (7.3,11.1)	
Gender				
Male	607	58	9.6% (7.3,12.2)	0.68
Female	1267	130	10.3% (8.6,12.1)	
Current smoker				
Yes	339	27	8.0% (5.3,11.4)	0.19
No	1535	161	10.5% (9.0,12.1)	
Living region				
Laussane (agglom.)	1071	108	10.1% (8.3,12.0)	>0.99 (Laussane vs others)
La Côte	106	12	11.3% (6.0,18.9)	
Lavaux	107	12	11.2% (5.9,18.8)	
Nord Vaudois	177	16	9.0% (5.3,14.3)	
Genève	27	2	7.4% (0.9,24.3)	
Valais	29	2	6.9% (0.8,22.8)	
Berne	5	0	0.0% (0.0,52.2)	
Fribourg	83	8	9.6% (4.3,18.1)	
France	121	14	11.6% (6.5,18.7)	
Other	52	2	3.8% (0.5,13.2)	
Riviera-Chablais	96	12	12.5% (6.6,20.8)	
Living with others				
Yes	1567	160	10.2% (8.8,11.8)	0.60
No	307	28	9.1% (6.1,12.9)	

*: Fisher's exact test

Supp. table 4. COVID-19 seropositivity and breach of PPE in COVID-19 Units

Levels	HCWs in the sample	Seropositive HCWs	% positivity (95% CI)	p-value*
- Problem with protective mask				
Yes	69	8	11.6% (5.1,21.6)	0.83 (0.071; 0.86)
No	280	29	10.4% (7.0,14.5)	
- Problem with protective overcoat				
Yes	93	14	15.1% (8.5,24.0)	0.12 (0.42; 0.11)
No	256	23	9.0% (5.8,13.2)	

*: Fisher's exact test

Supp. table 5. COVID-19 seropositivity according to reallocations (home office rate, transfer to COVID-19 units)

	HCWs in the sample	Seropositive HCWs	% positivity (95% CI)	p-value*
Home office - Percentage				
No	1169	122	10.4% (8.7,12.3)	<i>No vs Yes :</i> 0.48
Yes, <50%	249	27	10.8% (7.3,15.4)	
Yes, 50-90%	171	16	9.4% (5.4,14.7)	
Yes, 100%	285	23	8.1% (5.2,11.9)	
Transferred to a new COVID-19 service				
Yes	248	23	9.3% (6.0,13.6)	<i>No vs Yes :</i> 0.73
No	1626	165	10.1% (8.7,11.7)	

*: Fisher's exact test

Supp. Table 6. COVID-19 seropositivity according to household contacts

Levels	HCWs in the sample	Seropositive HCWs	% positivity (95% CI)	<i>p-value*</i>
Living with others				
Yes	1567	160	10.2% (8.8,11.8)	<u>0.6</u>
No	307	28	9.1% (6.1,12.9)	
Suspected (but unconfirmed) COVID-19 case in someone else at home				
Yes	237	45	19.0% (14.2,24.6)	<0.001
No	1637	143	8.7% (7.4,10.2)	
Confirmed COVID-19 case in someone else at home				
Yes	38	16	42.1% (26.3,59.2)	<0.001
No	1836	172	9.4% (8.1,10.8)	

*: Fisher's exact test

Supp. table 7. COVID-19 seropositivity and travels between January 2020 and mid-March 2020

Levels	HCWs in the sample	Seropositive HCWs	% positivity (95% CI)	<i>p-value*</i>
Travel outside CH (1Jan-17Mar)				
Yes	837	78	9.3% (7.4,11.5)	0.40
No	1037	110	10.6% (8.8,12.6)	
Travel in FR				
Yes	429	42	9.8% (7.1,13.0)	0.93
No	1445	146	10.1% (8.6,11.8)	
Travel in IT				
Yes	102	9	8.8% (4.1,16.1)	0.87
No	1772	179	10.1% (8.7,11.6)	
Travel in DE, AT, ES				
Yes	107	11	10.3% (5.2,17.7)	0.87
No	1767	177	10.0% (8.7,11.5)	
Travel in Asia				
Yes	68	7	10.3% (4.2,20.1)	0.84
No	1806	181	10.0% (8.7,11.5)	

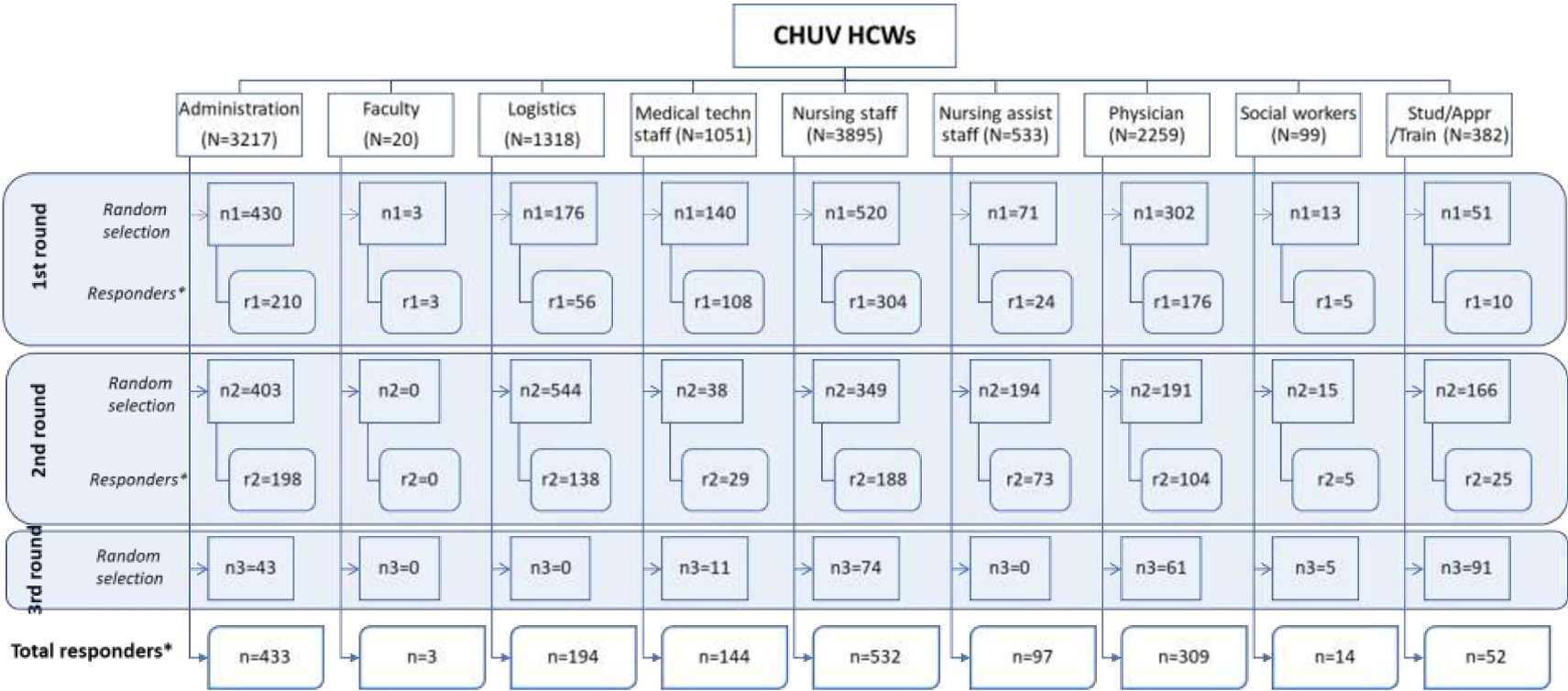
*: Fisher's exact test

Abbreviations: AT: Austria, CH: Switzerland, DE: Germany, ES: Spain, FR: France, IT: Italy

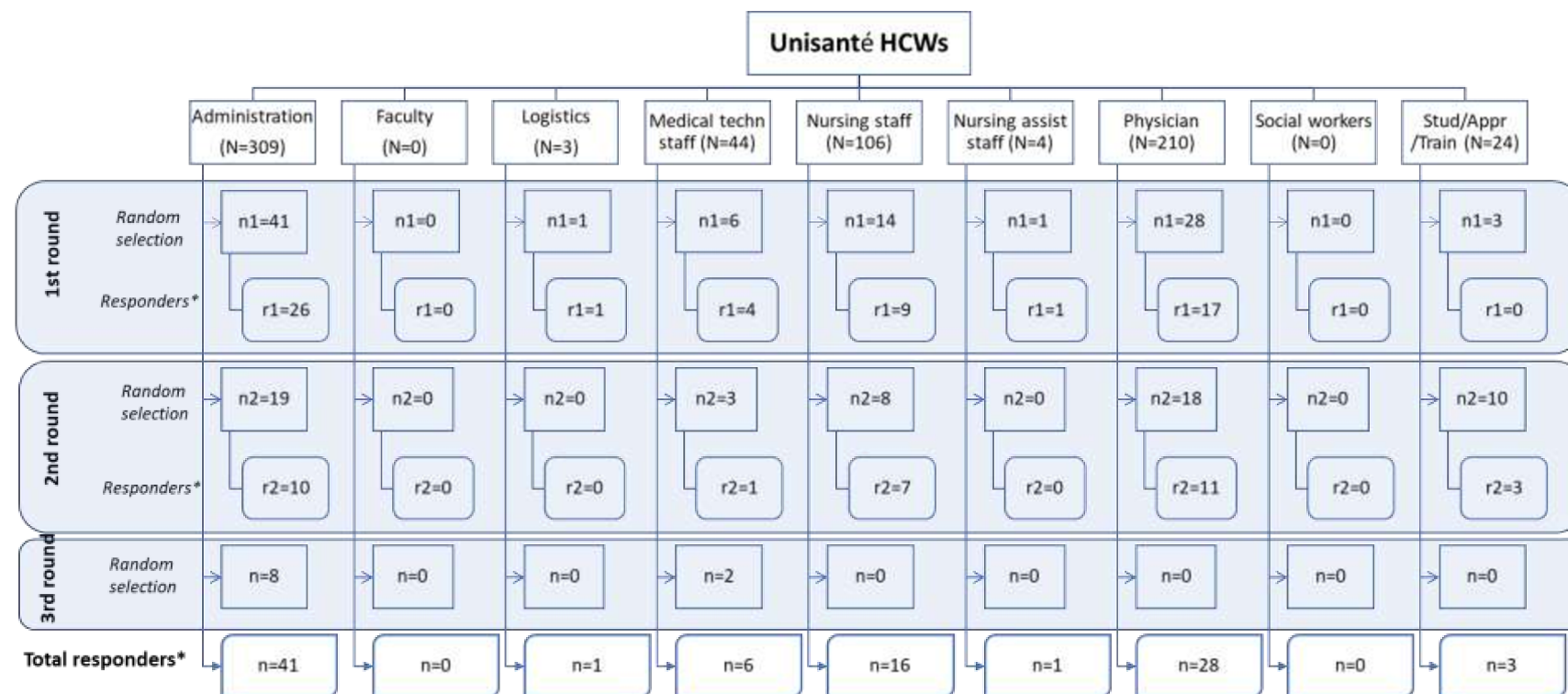
Supp. table 8. Associations of symptoms with COVID-19 seropositivity

	Overall (N=708)	Positive (n=118)	Negative (n=590)	<i>p-value*</i>
Fever				
Yes	259 (36.6)	57 (48.3)	202 (34.2)	<i>0.0046</i>
No	449 (63.4)	61 (51.7)	388 (65.8)	
Myalgia				
Yes	364 (51.4)	74 (62.7)	290 (49.2)	<i>0.0086</i>
No	344 (48.6)	44 (37.3)	300 (50.8)	
Sore throat				
Yes	350 (49.4)	45 (38.1)	305 (51.7)	<i>0.0086</i>
No	358 (50.6)	73 (61.9)	285 (48.3)	
Cold symptoms				
Yes	313 (44.2)	47 (39.8)	266 (45.1)	<i>0.31</i>
No	395 (55.8)	71 (60.2)	324 (54.9)	
Cough				
Yes	396 (55.9)	70 (59.3)	326 (55.3)	<i>0.48</i>
No	312 (44.1)	48 (40.7)	264 (44.7)	
Shortness of breath				
Yes	190 (26.8)	37 (31.4)	153 (25.9)	<i>0.25</i>
No	518 (73.2)	81 (68.6)	437 (74.1)	
Anosmia				
Yes	98 (13.8)	70 (59.3)	28 (4.7)	< <i>0.001</i>
No	610 (86.2)	48 (40.7)	562 (95.3)	
Dysgeusia				
Yes	93 (13.1)	63 (53.4)	30 (5.1)	< <i>0.001</i>
No	615 (86.9)	55 (46.6)	560 (94.9)	
Diarrhea				
Yes	160 (22.6)	27 (22.9)	133 (22.5)	<i>0.90</i>
No	548 (77.4)	91 (77.1)	457 (77.5)	

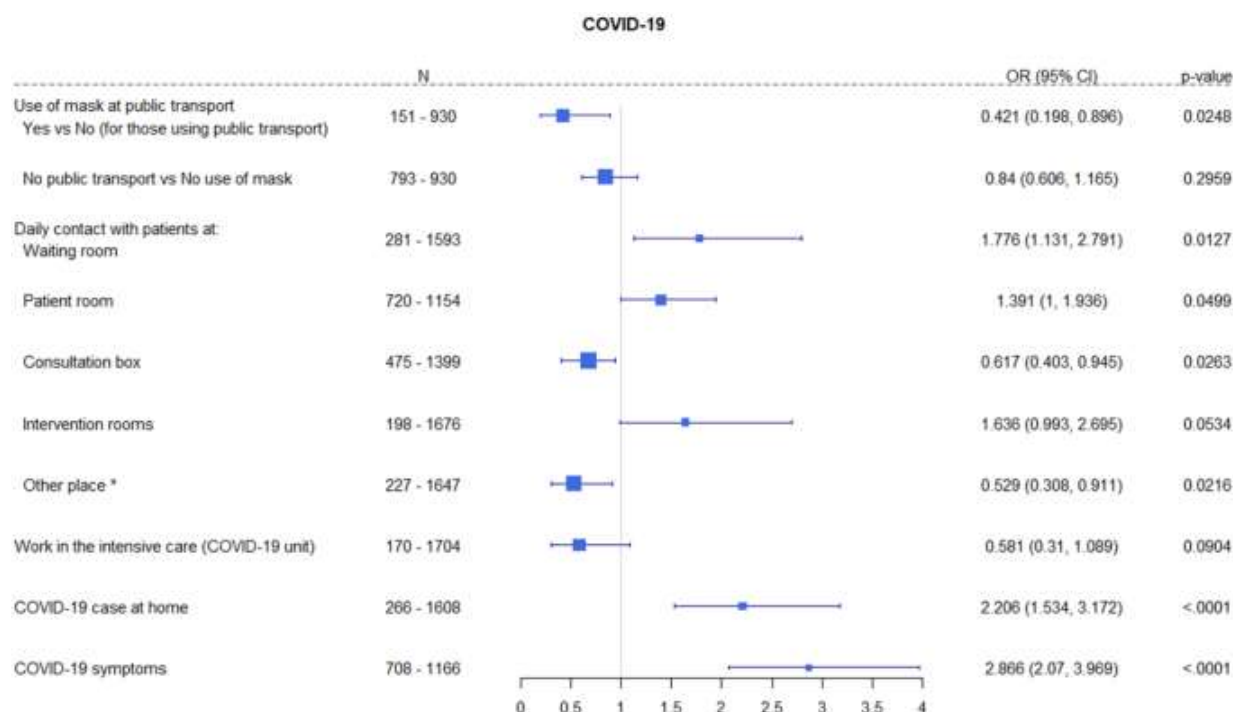
Supp. Fig.1. Flowchart of study’s sample selection process (By institution: A: CHUV; B: Unisante)



(*: Responders: responding to the questionnaire and with available blood measurements)



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Supp. figure 2. Odds ratios (ORs) for seropositivity by significant risk factors (multivariable logistic model)**Multicollinearity diagnostics**

Variable	Tolerance	Variance Inflation Factor (VIF)
Daily contact at waiting rooms	0.81353	1.22920
Daily contact at patient rooms	0.89889	1.11248
Daily contact at consultation box	0.78572	1.27272
Daily contact at intervention rooms	0.86601	1.15472
Daily contact at other place	0.95556	1.04651
Work in the intensive care (COVID-19 unit)	0.89258	1.12034
Use of mask at public transport	0.93290	1.07193
No public transport	0.91704	1.09047
COVID-19 case (suspected or confirmed) at home	0.95389	1.04833
Presence of symptoms compatible with COVID-19	0.94319	1.06024

Note: All VIF values are below the threshold of 10 and all tolerance values are above 0.1, suggesting lack of multicollinearity

Note 2: We have also performed multivariable logistic regression using 15.7% as elimination criterion. In that case one additional factor is retained, the use of personal vial of hydroalcoholic solution at work, with OR=0.76 (95% CI: 0.55-1.06), Wald p=0.102. The results for the other factors remain essentially the same.